



COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**

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Commissioner

**CERTIFICATION FOR GENERAL USE**

Pursuant to Title 5, 310 CMR 15.000

Name and Address of Applicant:

Bio-Microbics, Inc.  
8450 Cole Parkway  
Shawnee, KS 66227

Trade name of technology and models: MicroFAST® Treatment System Models *MicroFAST® 0.5, 0.75, 0.9, 1.5, 3.0, 4.5, 9.0*, HighStrengthFAST® Treatment System Models *HighStrengthFAST® 1.0, 1.5, 3.0, 4.5, 9.0* and NitriFAST® Treatment System Models *NitriFAST® 0.5, 0.75, 1.0, 1.5, 3.0, 4.5, 9.0* (hereinafter the "System"). Schematic drawings illustrating each of the models and an Inspection Checklist are attached and are part of this Certification.

Transmittal Number: W101238  
Date of Issuance: September 4, 2007  
Renewal Date: September 4, 2012

**Authority for Issuance**

Pursuant to Title 5 of the State Environmental Code, 310 CMR 15.000, the Department of Environmental Protection hereby issues this Certification for General Use to: Bio-Microbics, Inc., 8450 Cole Parkway, Shawnee, KS 66227 (hereinafter "the Company"), certifying the System described herein for General Use in the Commonwealth of Massachusetts. Sale and use of the System are conditioned on and subject to compliance by the Company and the System owner with the terms and conditions set forth below. Any noncompliance with the terms or conditions of this Certification constitutes a violation of 310 CMR 15.000.

Glenn Haas, Acting Assistant Commissioner  
Bureau of Resource Protection

September 4, 2007  
Date

**I. Purpose**

1. The purpose of this Certification is to allow the use of the System in Massachusetts on a General Use basis.
2. With the necessary permits and approvals required by 310 CMR 15.000, this Certification authorizes the installation and use of the System in Massachusetts.
3. The System may be installed on all facilities where a system in compliance with 310 CMR 15.000 exists on-site or could be built and for which a site evaluation in compliance with 310 CMR 15.000 has been approved by the local approving authority; or by the Department if Department approval is required by 310 CMR 15.000. This Approval allows for the use of the System as an equivalent alternative technology in accordance with 310 CMR 15.202 on facilities for nitrogen reduction in a Department designated nitrogen sensitive or limited area as defined in 310 CMR 15.214 and 15.215.
4. The technology shall meet the following requirements:
  - (a) effluent discharge concentrations shall meet or exceed secondary treatment standards of 30 mg/L BOD and 30 mg/L TSS. The effluent pH range shall be 6.0 to 9.0.
  - (b) total nitrogen concentration in the effluent shall not exceed 25 mg/L.
5. The System is approved for use at facilities with a maximum design flow less than 2000 gallons per day (gpd).

**II. Design Standards**

1. The System, MicroFAST® 0.5, 0.75, 0.9, 1.5, 3.0, 4.5 and 9.0, and, HighStrengthFAST® 1.0, 1.5, 3.0, 4.5 and 9.0, and, NitriFAST® 0.5, 0.75, 0.9, 1.5, 3.0, 4.5 and 9.0 units are installed in a tank or tanks having a primary settling zone and an aerobic biological zone. Solids settle in the primary settling zone that is quiescent. In the aerobic zone, the sewage is continually agitated and aerated. Bacteria in the sewage attach to the surface of a submerged plastic media; they reproduce by consuming the organic material in the sewage.
2. The MicroFAST® 0.5, 0.75 and 0.9, HighStrengthFAST® 1.0 and NitriFAST® 0.5, 0.75 and 0.9 are installed in the second compartment of a two-compartment tank with a total liquid capacity of at least 1,500 gallons constructed in accordance with 310 CMR 15.226.
3. The MicroFAST®, HighStrengthFAST® and NitriFAST® 1.5 are installed in the second compartment of a two compartment 3000-gallon tank constructed in accordance with 310 CMR 15.226.

4. The MicroFAST®, HighStrengthFAST® and NitriFAST® 3.0, 4.5, and 9.0 units are installed in a separate tank constructed in accordance with 310 CMR 15.226. The units are located between a standard Title 5 septic tank, designed in accordance with 310 CMR 15.223 and 15.224, and the soil adsorption system (SAS).
5. The System shall be installed between the building sewer and the SAS designed and constructed in accordance with 310 CMR 15.100 - 15.279, subject to the provisions of this Certification.
6. Access shall be provided to all tanks in the primary settling and aerobic biological zones in accordance with 310 CMR 15.228 (2). The tanks shall have at least three manholes with readily removable impermeable covers of durable material provided at grade. Two manholes, over the inlet and outlet, shall have a minimum opening of 20 inches. All access ports and manhole covers shall be secure removable impermeable covers of durable material installed and maintained at grade to allow for maintenance of the System.
7. The control panel including alarms shall be mounted in a location accessible to the operator of the System.
8. New Construction: When the System is used in areas subject to the nitrogen loading limitations of 310 CMR 15.214, an increase in calculated allowable nitrogen loading per acre is allowed for facilities as provided in 310 CMR 15.217(2). When used in such areas:
  - i. For all facilities, the design flow shall not exceed 550 gallons per day per acre (gpda), and the System shall not exceed 25 milligrams per liter (mg/L) total nitrogen (TN) concentration in the effluent measured as the total of TKN (Total Kjeldhal Nitrogen), NO<sub>3</sub>-N (Nitrate nitrogen) and NO<sub>2</sub>-N (Nitrite nitrogen).

### **III. General Conditions**

1. The provisions of 310 CMR 15.000 is applicable to the use and operation of this System, the System owner and the Company, except those that specifically have been varied by the terms of this Certification.
2. Any required operation and maintenance, monitoring and testing shall be performed in accordance with a Department approved plan. Any required sample analysis shall be conducted by an independent U.S. EPA or DEP approved testing laboratory, or a DEP approved independent university laboratory, unless otherwise provided in the Department's written approval. It shall be a violation of this Certification to falsify any data collected pursuant to an approved testing plan, to omit any required data or to fail to submit any report required by such plan.

3. The facility served by the System and the System itself, shall be open to inspection and sampling by the Department and the local approving authority at all reasonable times.
4. In accordance with applicable law, the Department and the local approving authority may require the System owner to cease operation of the system and/or to take any other action as it deems necessary to protect public health, safety, welfare or the environment.
5. The Department has not determined that the performance of the System will provide a level of protection to public health and safety and the environment that is at least equivalent to that of a sanitary sewer system. Accordingly, no System shall be upgraded or expanded, if it is feasible to connect the facility to a sanitary sewer, unless as allowed by 310 CMR 15.004.
6. Design, installation, and use of the System shall be in strict conformance with the Company's DEP approved plans and specifications and 310 CMR 15.000, subject to this Certification.
7. Any commercial use of the System requires an intended use review and approval by the Company or its agent.

**IV. Conditions Applicable to the System Owner**

1. The System is certified only in connection with the discharge of sanitary wastewater from facilities with a design flow of less than 2000 gpd. Any non-sanitary wastewater generated and/or used at the facility served by the System shall not be introduced into the System and shall be lawfully disposed of.
2. Effluent TN concentrations for all facilities shall not exceed 25 mg/L and BOD<sub>5</sub> and TSS shall not exceed a concentration of 30 mg/L, respectively. The effluent pH shall not be less than 6.0 or more than 9.0. Field test observations of DO shall equal or exceed 2 mg/L and for Turbidity shall be equal or less than 40 NTU.
3. All samples shall be taken at a flowing discharge point, i.e. distribution box, pipe entering a pump chamber or other Department approved location from the treatment unit.
4. Operation and Maintenance agreement:
  - i. Throughout its life, the System shall be under an operation and maintenance (O&M) agreement. No O&M agreement shall be for less than one year.
  - ii. No System shall be used until an O&M agreement is submitted to the local approving authority which:
    - a. Provides for the contracting with the Company or a Company approved operation and maintenance contractor that has been trained by the Company to operate the System consistent with the System's specifications and any additional operation and

maintenance requirements specified by the designer, the local approving authority, or the Department;

5. The System owner shall at all times have the System properly operated and maintained in accordance with this Certification, the designer's operation and maintenance requirements and the Company's approved procedures. The System owner shall notify the Department and local approving authority, in writing, within seven days of a change in the operator of the System.
6. The System owner shall provide a copy of this Certification, prior to the signing of a purchase and sale agreement for the facility served by the System or any portion thereof, to the proposed new owner.
7. The System owner shall furnish the Department any information that the Department requests regarding the System, within 21 days of the date of receipt of that request.
8. In areas subject to the nitrogen load limitations in 310 CMR 15.214 and 15.215:
  - i. For Systems in use year round: effluent from the System shall be monitored at least once per calendar quarter. Any sample collected within 60 days or more than 90 days of a previous sample shall not be considered a required quarterly sample. The following parameters shall be monitored: pH, effluent CBOD5, TSS, alkalinity and TN. Each time the System is monitored, the water meter, if a water meter is installed, shall be read and the water use recorded. All monitoring data shall be submitted to the Department and the local approving authority per item 9. After two years of monitoring and at the written request of the System owner, the local approving authority may reduce the inspection and monitoring requirements for **residential** systems to semi-annual inspections with field testing for pH, DO and turbidity and laboratory testing for TN.

- ii. For Systems in use seasonally, where the facility is occupied fewer than six months per year; effluent from the System shall be monitored twice per season; initially 45 days after occupancy, and if the facility is occupied during an additional calendar quarter, once during that following quarter prior to System shut down. The following parameters shall be monitored: pH, CBOD5, TSS, TN and alkalinity. Each time the System is monitored, the water meter, if a water meter is installed, shall be read and the water use recorded. All monitoring data shall be submitted to the Department and the local approving authority per item 9. After two years of monitoring and at the written request of the System owner, the local approving authority may reduce the inspection and monitoring requirements for **residential** systems to annual inspections with field testing for pH, DO and turbidity and laboratory testing for TN.
  - iii. For all non residential systems after three years of monitoring and at the written request of the System owner, the local approving authority may reduce the inspection and monitoring requirements to quarterly inspections with field testing for pH, DO and turbidity and laboratory testing for TN.
9. By September 30<sup>th</sup> of each year, the System owner shall submit to the Department and the local approving authority an O&M and technology checklist, completed by the System operator for each inspection performed during the previous 12 months.
10. Prior to the issuance of a Certificate of Compliance for the System, the System owner shall record and/or register in the appropriate Registry of Deeds and/or Land Registration Office, a Notice disclosing the existence of the alternative septic system subject to this Approval on the property. If the property subject to the Notice is unregistered land, the Notice shall be marginally referenced on the owner's deed to the property. Within 30 days of recording and/or registering the Notice, the System owner shall submit the following to the local approving authority: (i) a certified Registry copy of the Notice bearing the book and page/instrument number and/or document number; and (ii) if the property is unregistered land, a Registry copy of the owner's deed to the property, bearing the marginal reference.

**V. Conditions Applicable to the Company**

1. By January 31<sup>st</sup> of each year, the Company shall submit to the Department, a report, signed by a corporate officer, general partner or Company owner that contains information on the System for the previous calendar year. The report shall state: the number of units of the System sold for use in Massachusetts during the previous year; the address of each installed System, the owner's name and address, the type of residential use and the design flow; and for all Systems installed since the first issuance of Certification for the System, all known failures, malfunctions, and corrective actions taken and the address of each such event.
2. The Company shall notify the Director of the Wastewater Management Program at least 30 days in advance of the proposed transfer of ownership of the

technology for which this Certification is issued. Said notification shall include the name and address of the proposed new owner and a written agreement between the existing and proposed new owner containing a specific date for transfer of ownership, responsibility, coverage and liability between them. All provisions of this Certification applicable to the Company shall be applicable to successors and assigns of the Company, unless the Department determines otherwise.

3. The Company shall develop maintain and update as necessary the following: minimum installation requirements; an operating manual, including information on substances that should not be discharged to the System; a maintenance checklist; and a recommended schedule for maintenance of the System consistent with the Department's requirements essential to consistent successful performance of the installed Systems.
4. The Company shall institute and maintain a program of operator training and continuing education. The Company shall maintain and annually update, and make available the list of qualified operators by January 31<sup>st</sup> and make the list known to local approving authorities, the Department and to users of the technology.
5. The Company shall furnish the Department any information that the Department requests regarding the System, within 21 days of the date of receipt of that request.
6. The Company shall include copies of this Certification and the procedures described in Section V (3) with each System that is sold. In any contract executed by the Company for distribution or re-sale of the System, the Company shall require the distributor or re-seller to provide each purchaser of the System with copies of this Certification and the procedures described in Section V (3).
7. If the Company wishes to continue this Certification after its expiration date, the Company shall apply for and obtain a renewal of this Certification. The Company shall submit a renewal application at least 180 days before the expiration date of this Certification, unless written permission for a later date has been granted in writing by the Department. This Certification shall continue in force until the Department has acted on the renewal application

## **VI. Reporting**

1. All notices and documents required to be submitted to the Department by this Certification shall be submitted to:

Director  
Wastewater Management Program  
Department of Environmental Protection  
One Winter Street - 5th floor  
Boston, Massachusetts 02108

## **VII. Rights of the Department**

1. The Department may suspend, modify or revoke this Certification for cause, including, but not limited to, non-compliance with the terms of this Certification, non-payment of the annual compliance assurance fee, for obtaining the Certification by misrepresentation or failure to disclose fully all relevant facts or any change in or discovery of conditions that would constitute grounds for discontinuance of the Certification, or as necessary for the protection of public health, safety, welfare or the environment, and as authorized by applicable law. The Department reserves its rights to take any enforcement action authorized by law with respect to this Certification and/or the System against the owner or operator of the System and/or the Company.

## **VIII. Expiration date**

1. Notwithstanding the expiration date of this Certification, any System sold and installed prior to the expiration date of this Certification, and approved, installed and maintained in compliance with this Certification (as it may be modified) and 310 CMR 15.000, may remain in use unless the Department, the local approval authority, or a court requires the System to be modified or removed, or requires discharges to the System to cease.